



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,290	10/01/2002	Sheng-Fuh Chang	ATCP0002USA	5714
27765	7590	03/02/2004	EXAMINER	
NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)			JONES, STEPHEN E	
P.O. BOX 506			ART UNIT	
MERRIFIELD, VA 22116			PAPER NUMBER	
			2817	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,290

Applicant(s)

CHANG ET AL.

Examiner

Stephen E. Jones

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:

In line 27, it appears that the phrase "the image signal will bypass the third microstrip" should read as --the image signal will bypass through the third microstrip-- since the third microstrip is the stub which functions to shunt the image signal to ground (e.g. see the present specification page 7, section 24).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1-2 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saka in combination with Ye et al.

Ye et al. (Figs. 3-4) teaches bandpass filters including: microstrip resonant line sections (i.e. lines having pre-determined lengths) which are coupled at their open ends (see Col. 1, lines 19-21 and 23-40), and the filter is used in a communication circuit.

However, Ye does not teach that the sections include stubs for an image signal (i.e. heterodyne noise) to bypass through to ground, or that the circuit is applied to a transceiver (Claim 7).

Saka (Fig. 9) is an exemplary teaching that different lengths of open ended stubs (4, 5, 6) can be attached to a signal main line and can be selected as equal to or near a quarter wavelength of the image signal (i.e. the heterodyne noise/image signal of the mixer is passed to ground through the stubs in the same manner as the present invention and thus can be considered an impedance matching circuit in the same manner as the present invention); and the stubs and main line (3) can be either stripline or microstrip (i.e. on a board having a ground plane on the opposite side from the line and stubs) (e.g. see Col. 1, lines 5-68 and Col. 2, lines 12-21), and Saka teaches removing above and below image signal frequencies (see Col. 1, lines 32-48) (Claim 9). With respect to Claim 8, it should be noted that a heterodyne generates an image frequency in the same manner, that is the image frequency is dependent on the type of mixer (i.e. heterodyne).

Regarding Claims 1, 2, it would have been considered obvious to one of ordinary skill in the art to have included open ended stubs such as taught by Saka attached to

the line sections of the Ye filter, because it would have provided the advantageous benefit of a means for shunting unwanted noise (such as heterodyne noise of a mixer) (see Saka Col. 2, lines 29), thereby suggesting the obviousness of such a modification. Furthermore, although Saka is silent as to what type of communication device the filter is applied, it would have been considered obvious to one of ordinary skill in the art to have applied the Saka/Ye combination circuit to a well-known transceiver, because transceivers (i.e. a transmitter and receiver combination) provide the advantageous benefit of shared circuit components between the transmit and receive circuitry (such as an antenna) which reduces the number of components needed in a communication device.

5. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saka and Ye et al. as applied to claim 1 above, and further in view of Hayt, Jr. (Engineering Electromagnetics).

The combination of Saka and Ye teaches a filter circuit as described above. However, the combination does not explicitly teach that the various impedances (such as in Claims 3 and 5) are real numbers, or that the combination device of Saka and Ye would satisfy the impedance relationships of Claims 4 and 6.

Hayt, Jr. teaches that the goal of impedance matching using stubs is to have only a real component with the imaginary part being zero (e.g. see page 454).

It would have been considered obvious to one of ordinary skill in the art to have selected the stubs in the combination of Saka and Ye such that the impedances are real numbers with no imaginary part such as suggested by Hayt, Jr, because it would have

Art Unit: 2817

provided the advantageous benefit of optimal impedance matching of the circuit. Also, as a result of the optimized impedance of the circuit, the impedance relationships of Claims 4 and 6 would be satisfied (i.e. the combination forms a j-inverter).

Conclusion


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Von Stein teaches a matching circuit with stubs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Stephen Jones
Patent Examiner
Art Unit 2817

SEJ